supply voltage monitor

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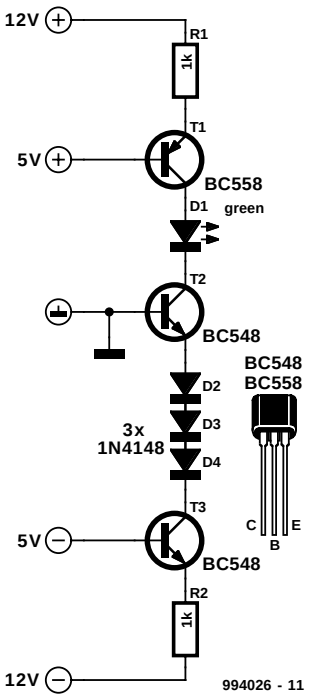

G. Kleine

A circuit for monitoring supply voltages of ±5 V and ±12 V is readily constructed as shown in the diagram. It is appreciably simpler than the usual monitors that use comparators, and AND gates. The circuit is not intended to indicate the level of the inputs.

In normal operation, transistors T_1 and T_3 must be seen as current sources. The drop across resistors R_1 and R_2 is 6.3 V (12–5–0.7). This means that the current is 6.3 mA and this flows through diode D_1 when all four voltages are present. However, if for instance, the –5 V line fails, transistor T_3 remains on but the base-emitter junction of T_2 is no longer biased, so that this transistor is cut off. When this happens, there is no current through D_1 which then goes out.

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